

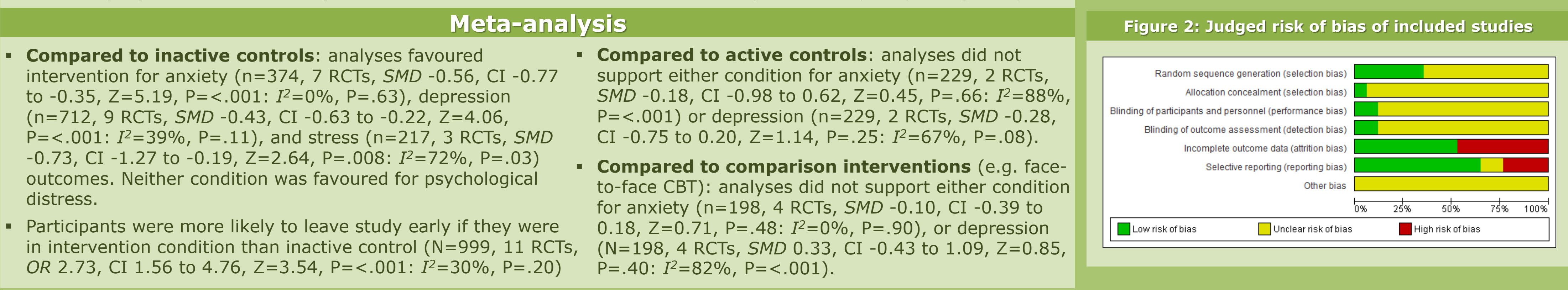
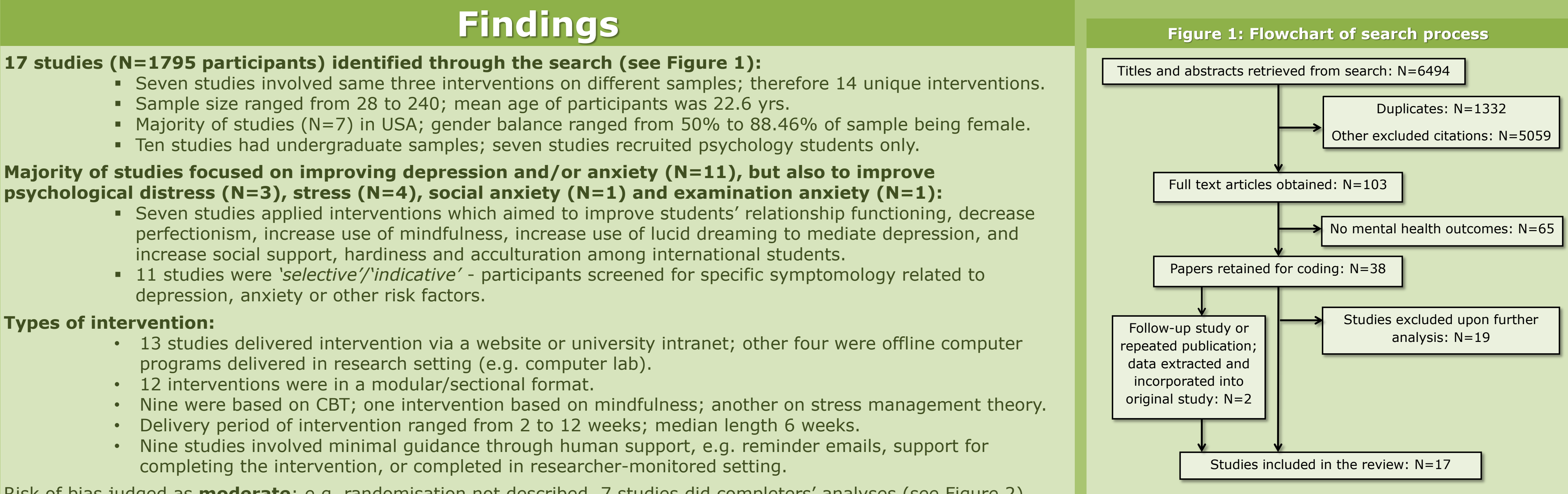
Background

- Anxiety and depression are common mental health problems experienced by university students, and can impair their academic and social functioning¹.
- Young people’s professional help-seeking for mental health problems is limited; they tend to prefer informal help (e.g. friends) rather than professional help².
- Students cite various barriers and hurdles to seeking help, e.g. perceived stigma, impact of disclosure and lack of perceived need for help³.
- Universities and students are well connected to computerised and internet-enabled technologies - online interventions could be useful health promotion strategies to improve students’ mental health⁴.
- These interventions hold advantages that may be favourable to students, e.g. anonymity and privacy of access⁴.

Aim: to review the effectiveness of computer and website-based interventions to improve mental health and well-being outcomes in university students. This expands upon a review of technology-based interventions for mental health in tertiary students⁵.

Methodology

- Inclusion criteria:** was randomised controlled trial (RCT); intervention was self-guided (no contact with health professionals) and designed to change psychological well-being or mental health symptomology with relevant outcome measures; intervention was delivered and accessed via internet or computer; interventions had minimal human contact; trialled on higher education students only.
- Exclusion criteria:** did not measure targeted mental health symptomology; not trialled on higher education students; not RCT; used historical controls; both experimental and comparison groups received same intervention with no controls.
- Search of several databases and hand-searches conducted March-April 2012 and repeated June 2013.
- Data extracted using template based on Cochrane Review guidelines⁶ and CONSORT eHEALTH checklist⁷. Trial quality assessed using Cochrane Collaboration’s risk of bias tool⁶.
- RevMan software used to extract and analyse outcome data where possible for meta-analysis.



Discussion and Implications

- Website-based and computer-delivered interventions were found to help improve depression, anxiety and stress outcomes in university students when compared to no intervention.
 - Neither intervention or comparison intervention or active control were significantly favoured in meta-analysis, which may suggest some equivalency in their effect upon improving outcomes.
- Ten studies reported skewed post-intervention data on one outcome and not all data could be extracted for analysis; this may affect the calculated effect sizes.
- Small samples were common, and several used psychology or health sciences students and oversampled females.
 - Future research needs to explore whether interventions are effective for students in other disciplines, and need to sample more males: young male adults are frequently cited as being less likely to seek out help for their mental health⁸.
 - Mean age of overall sample in review deviates slightly from traditional age range of university students.
- Limited follow-up conducted – only five studies conducted follow up.
 - No studies looked at whether participants’ help-seeking intentions or behaviours improved as result of intervention.
 - These kinds of interventions are a form of mental health prevention – therefore these outcomes are important.
- Difficult to decipher the intervention ‘ingredients’ which aided or hindered their effectiveness – authors could use CONSORT eHEALTH checklist⁷ to aid clarity of intervention content.
- Small number of outcome measures made comparisons less complicated - but combined with skewed data and differences in baseline symptomology, it may have resulted in heterogeneity in analyses.
- Provision of human support (e.g. giving reminders) is important – may give participants motivation to complete intervention.
 - Students may be less inclined to engage with intervention if they do not have any support to complete it.
- Some interventions trialled in this review may not be designed specifically for university students⁵.
- Overall we judged a ‘moderate’ risk of bias - mostly due to insufficient reporting of trial methodology and how outcome data were analysed.
- Several British HEIs have incorporated website-based interventions into their welfare services⁹ - best improvements in mental health outcomes may be achieved through combining self-help with face-to-face support¹⁰.
 - Online interventions could be used as a support tool by students whilst waiting to see a relevant professional.
- Student evaluation beneficial to exploring their perceptions of interventions:
 - Usability testing and evaluation of interventions could explore whether they are appropriate for students, the relevancy of their content etc.
 - Changes could be made to help improve effectiveness of interventions, or to target specific student sub-groups (e.g. international students, students in different disciplines of study).
- Mobile/tablet apps are also another intervention strategy potentially preferable for this population – further research in this area is encouraged.